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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTOPHER E. SCHAFER and RODNEY M. RAMSEY

Appeal 2009-012438
Application 10/697,376
Technology Center 3700

Before JOHN C. KERINS, KEN B. BARRETT, and
GAY ANN SPAHN, *Administrative Patent Judges*.

SPAHN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Christopher E. Schafer and Rodney M. Ramsey (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1-3 and 6-14. Claims 4 and 5 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The claims on appeal relate to an apparatus for retaining fluid in a liquid delivery tube. Claim 1, reproduced below, is illustrative of the subject matter on appeal.

> 1. An apparatus for retaining fluid in a liquid delivery tube comprising
> a. [a] lower portion having a ball valve that permits only unidirectional flow of fluids and includes a valve chamber for housing a ball and having an inlet end and an outlet end being spaced apart sufficiently so that said ball is longitudinally, reciprocally movable within said chamber from a closed position at the inlet end of said chamber to an open position at the outlet end of said chamber;
> b. [a]n upper tubular portion that has an outside diameter that is tapered to its terminus to facilitate insertion into a liquid delivery tube, said tubular portion having an elongated, tapered passageway that communicates with said outlet end of the valve chamber to convey fluid from said chamber to said tube; and
> c. said valve chamber inlet end includes a valve seat having sidewalls that taper inwardly from said valve chamber such that the diameter of said valve seat is reduced toward the valve chamber inlet end to prevent said ball from becoming stuck therein.

The Rejections

The following Examiner's rejections are before us for review:

Claims 1-3, 7-10, and 12 stand rejected under 35 U.S.C. § 102(b) as anticipated by Woodward (U.S. Patent No. 4,070,237, issued Jan. 24, 1978).

Claims 6, 11, and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Woodward.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Woodward and Wright (U.S. Patent No. 3,773,256, issued Nov. 20, 1973).

SUMMARY OF DECISION

We AFFIRM-IN-PART.

OPINION

Anticipation based upon Woodward

The Examiner finds that Woodward's Figure 3A embodiment anticipates the subject matter of claims 1-3, 7-10, and 12. Ans. 4-6. Appellants first contend that Woodward does not anticipate the claims for failing to disclose whether its apparatus can retain fluid to meet the preamble language of "[a]n apparatus for retaining fluid in a liquid delivery tube." Br. 9. We are not persuaded by Appellants' argument. Even assuming that the recitation of "for retaining fluid in a liquid delivery tube" in the preamble of independent claims 1 and 10 is a limitation, it is, at most, a functional recitation. A reference must be capable of performing the recited function in order to anticipate the claim. *In re Schrieber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Thus, it is not required that Woodward explicitly discloses that its apparatus can retain fluid. Rather, Woodward's apparatus 7 only needs to be capable of performing the recited function of retaining fluid in a liquid

delivery tube. Here, the Examiner finds that Woodward is capable of retaining fluid, in the form of air, in a liquid delivery tube and Appellants have not provided any evidence that Woodward is not capable of retaining air in a liquid delivery tube.

Appellants also contend that Woodward does not meet independent claim 1's language of "[a]n upper tubular portion that has an outside diameter that is tapered to its terminus to facilitate insertion into a liquid delivery tube" because Woodward's Figure 2A embodiment has an upper portion that is internally threaded for insertion of the liquid delivery tube into the apparatus. Br. 10. We are not persuaded by Appellants' argument because the Examiner applied the Figure 3A embodiment of Woodward, not the Figure 2A embodiment. *See* Ans. 4-6. Woodward's Figure 3A embodiment does not have an internally threaded portion, but rather has chamfers that appear to be capable of performing the recited function of facilitating the insertion of the apparatus 7 into a liquid delivery tube at least to some degree.

Appellants also contend that Woodward does not have any description or indication that the outside diameter of the upper portion of its bleed valve 7 facilitates insertion into a liquid delivery tube and that the chamfers of Figure 3A are "much to[o] slight to facilitate insertion into a liquid delivery tube." Br. 10. Since the recitation of "to facilitate insertion into a liquid delivery tube" is a recitation of intended use, it is not required that Woodward have any description or indication that the outside diameter of the upper portion facilitates insertion into a liquid delivery tube. Rather, Woodward's Figure 3A embodiment only needs to be capable of performing the recited function. The Examiner finds that the chamfers would facilitate

insertion into a liquid delivery tube. We are not persuaded by Appellants' argument that the chamfers are too small to facilitate insertion into the liquid delivery tube because, as stated by the Examiner in the Response to Argument section of the Answer, a slight chamfer is all that is required in some cases to facilitate insertion into a liquid delivery tube. See Ans. 8-9.

Turning to claim 7, the Examiner finds that Woodward's Figure 3A embodiment has an upper tubular portion 13 with a passageway having a diameter that tapers inwardly at inside wall 22 so that the fluid flow is restricted. Ans. 6. Appellants contend that flow would not be further restricted in the upper tubular portion 13 of Woodward because the outlet passage 21 is larger than the inlet passage 17. Br. 10. We are not persuaded by Appellants' argument because Woodward's Figure 3A embodiment shows that fluid flow area is increased from the diameter of inlet opening 17 by the tapered seat 16 to a maximum diameter within the central portion of the bleed valve 7 and then fluid flow is restricted at the inwardly tapering inside wall 22 of the top cap 13. The tapering of the inside wall 22 from the maximum diameter of the passageway at the center portion of the bleed valve 7 clearly restricts fluid flow regardless of whether the inlet opening 17 has a larger diameter than the outlet opening 21.

Turning to claim 8, the Examiner finds that the diameter of the passageway of the upper tubular portion 13 is adjustable by trimming at inside wall 22 above stop 24 to increase the area for increased flow of the fluid through the apparatus 7. Ans. 6. The Examiner asserts that the claim language that the diameter of the passageway of the upper tubular portion "is adjustable by trimming to increase flow of fluid through the apparatus" is merely a recitation that the device be capable of being adjusted to increase

flow, a function which Woodward is clearly capable of performing. Ans. 10. Indeed, the Examiner states that "[c]learly the device of Woodward could be cut along a line of the tapered inner portion 22 which would increase flow through the valve, since the exiting hole would be larger and less restrictive." *Id.*

Appellants first contend that because the outlet passage 21 of Woodward is larger than the inlet passage 17, flow cannot be increased by further widening the portion 22 through trimming. Br. 11. We are not persuaded by Appellants' argument. The Examiner finds that if the inside wall 22 of Woodward's Figure 3A embodiment were trimmed to increase the diameter above stops 24, then fluid flow through the apparatus 7 would be increased. Ans. 6. The fact that the inlet opening is smaller in diameter than the outlet opening does not mean that fluid flow is not increased through the center of the apparatus 7 by the tapering seat and then decreased by the tapering inside wall 22. Thus, it appears that if the diameter of the tapering side wall 22 were increased by trimming above 24, this would increase fluid flow through apparatus 7.

Appellants also contend that trimming portion 22 of Woodward would effectively remove the chamfers and thus, the modified Woodward apparatus would no longer meet the claim 1 language of an upper tubular portion having an outer tubular portion tapered to its terminus to facilitate insertion into a liquid delivery tube. Br. 11. We are not persuaded by Appellant's argument because the Examiner has not proposed to trim apparatus 7 by cutting off the end top cap 13 and thus, remove the chamfer. Although it appears from the present Specification that cutting off the outlet end 16 below the accelerated tapered portion is how Appellants are

performing trimming (Spec. 7: 19-21 and 8: 7-10), this is not how the Examiner proposes to adjust by trimming. Rather, the Examiner is proposing to adjust by trimming to make the upper portion of inside wall 22, above stop rod 24, have a larger diameter. Since it appears the Examiner's proposed modification would increase fluid flow through the apparatus 7, we agree with the Examiner that Woodward's Figure 3A embodiment is capable of performing the recited function of being adjustable by trimming to increase flow of fluid through the apparatus.

In view of the foregoing, we sustain the Examiner's rejection of claims 1-3, 7-10, and 12 under 35 U.S.C. § 102(b) as anticipated by Woodward.

Obviousness based upon Woodward

The Examiner finds that Woodward discloses the invention substantially as claimed in claims 6, 11, and 14, except that Woodward discloses its valve seat sidewalls are tapered at 25 degrees and thus, fails to disclose the particular range of angles for the valve seat sidewall taper recited by Appellant. Ans. 6-7. However, the Examiner finds that Woodward recognized that the selected angle is a results-effective variable because the valve seat sidewall taper angle must be sufficient to prevent jamming of the ball in the seat. *Id.* The Examiner concluded that since Woodward recognized that the angle taper was a results-effective variable, it would have been obvious to one of ordinary skill in the art to have chosen the valve seat sidewall taper angle in the claimed ranges because "it has been held that where the general conditions of a claim are disclosed in the prior

art, discovering the optimum or workable ranges involves only routine skill in the art."[1]

Appellants first contend that Woodward is non-analogous art because it is not in the same field of endeavor and Woodward makes no suggestion of the problems faced by Appellants so as not to be reasonably pertinent to the specific problem of concern of the present claimed subject matter. Br. 12. We do not agree with Appellants that Woodward is non-analogous art. Although Woodward may be from a different field of endeavor than Appellants' claimed subject matter, Woodward appears to be reasonably pertinent to the particular problem with which the present claimed subject matter is involved (i.e., fluid retaining apparatus having a ball valve for retaining fluid in a liquid delivery tube) and would have logically commended itself to the inventor's attention in considering his problem. *See In re Clay,* 966 F.2d 656, 659 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem."). In other words, we find that Woodward's valve 7 is a familiar item that has obvious uses beyond its primary purpose. *See KSR Int'l Co. v. Teleflex, Inc.,* 550 U.S. 398, 402 (2007) ("familiar items may have obvious uses beyond their primary purposes.").

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[1] As support for this proposition, the Examiner cites to the Manual of Patent Examining Procedure (MPEP) § 2144.05. Within that section, we note that subsection II, entitled "Optimization of Ranges," discusses *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.").

Next, Appellants contend that there is no teaching or motivation provided in Woodward to use a valve seat taper angle of less than 25 degrees with ball valves for use with drinking apparatuses and Woodward does not provide motivation to try any other valve seat angles, including those claimed. Br. 12-13. Appellants also contend that Woodward's 25 degree angle is considerably larger than the "generally less than 21 degree" angle upper limit claimed and valve seat angles even a few degrees higher than the claimed range would provide an unsatisfactory seal, while angles less than the claimed range resulted in the ball tending to stick in the valve seat as attested to in the Schafer Declaration. Br. 13. We are not persuaded by Appellants' arguments. In rejecting claims under 35 U.S.C. § 103(a), the examiner bears the initial burden of establishing a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992); *see also In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the appellant. *See Oetiker*, 977 F.2d at 1445; *see also Piasecki*, 745 F.2d at 1472. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *Id.*

Here, we find that the Examiner met the burden of establishing a *prima facie* case of obviousness. Thus, the Examiner successfully shifted the burden to Appellants and Appellants have failed to come forward with evidence or persuasive arguments to establish nonobviousness. In particular, we note that Appellants' reliance upon the Schafer Declaration under 37 C.F.R. § 1.132 is misplaced. The Schafer Declaration appears to declare that the present inventors performed routine experimentation using four specific valve seat taper angles of the ball valve. What the Schafer Declaration fails

to state is that either persons of ordinary skill in the art would fail to recognize that the taper angle was a results-effective variable or that the inventor's experimentation resulted in unexpectedly good results, in order to rebut the Examiner's *prima facie* case of obviousness by carving out an exception to the general rule with respect to optimization of variables set forth in *Aller*. *See In re Antonie,* 559 F.2d 618, 620 (CCPA 1977) (However, exceptions have been found where the results of optimizing the variable are unexpectedly good or where the parameter optimized was not recognized to be a result-effective variable.).

Finally, Appellant also contends that Woodward teaches away from using valve seat angles less than 25 degrees because the decreased angles increase the likelihood of jamming. Br. 13-14. We disagree as we find that Appellants' contention that Woodward teaches away from valve seat angles of less than 25 degrees is not supported by evidence or persuasive argument that Woodward criticizes, discredits, or otherwise discourages using a valve seat angle less than 25 degrees. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).

In view of the foregoing, we sustain the Examiner's rejection of claims 6, 11, and 14 under 35 U.S.C. § 103(a) as unpatentable over Woodward.

Obviousness based upon Woodward and Wright

The Examiner finds that Woodward discloses the invention substantially as claimed in claim 13, except that Woodward fails to disclose the liquid delivery tube being in the form of a straw having an upper end for delivering fluid to the mouth of a user and a bottom end to which the apparatus is attached which is taught by Wright. Ans. 8. The Examiner

concludes that it would have been obvious to one of ordinary skill in the art to employ the straw liquid delivery tube as taught by Wright onto the valve of Woodward "in order to provide a means to assist a child in drinking from a straw." *Id.*

Appellants contend that the Examiner has failed to establish a *prima facie* case of obviousness because Wright already states that its device assists a child in drinking from a straw and thus, Wright provides no further motivation to use the valve of Woodward therein (i.e., because Woodward is directed towards use with a bleed valve, it cannot provide motivation for its combination with a drinking apparatus). Br. 16.

We agree with Appellants that the Examiner has failed to establish a prima facie case of obviousness based upon the combination of Woodward and Wright. Wright discloses a liquid delivery tube 18/14 having a ball check valve 30 at the end thereof to help retain fluid therein. We believe that the Examiner has not articulated a reasonable basis with rational underpinnings as to how the two references of Woodward and Wright could be combined to render the claimed subject matter prima facie obvious because it is not apparent why a person of ordinary skill in the art would attach the valve 7 of Woodward at the end of tube 14 of Wright when Wright already has a ball check valve to assist a child in drinking from a straw. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir 2006) (There must be some "reasoning with some rational underpinning to support the legal conclusion of obviousness."). *See also KSR* at 418 (This reasoning must show that "there was an apparent reason to combine the known elements in the fashion claimed.").

In view of the foregoing, we do not sustain the Examiner's rejection of claim 13 under 35 U.S.C. § 103(a) as unpatentable over Woodward and Wright.

DECISION

We affirm the Examiner's rejections of claims 1-3, 7-10, and 12 under 35 U.S.C. § 102(b) as anticipated by Woodward and claims 6, 11, and 14 under 35 U.S.C. § 103(a) as unpatentable over Woodward.

We reverse the Examiner's rejection of claim 13 under 35 U.S.C. § 103(a) as unpatentable over Woodward and Wright.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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